

Know Your Lidar Data

Assessing the Accuracy/Quality
Integrating Other Sources of Data
Extracting Information and Features From
Lidar Data

Karen Kwasnowski



GROUNDPOINT
TECHNOLOGIES, LLC

Today's Topics

- ▶ What does Lidar data look like?
- ▶ Errors in the Lidar data
- ▶ Integrating other datasets with Lidar
- ▶ Extracting Information from Lidar



Today's Topics

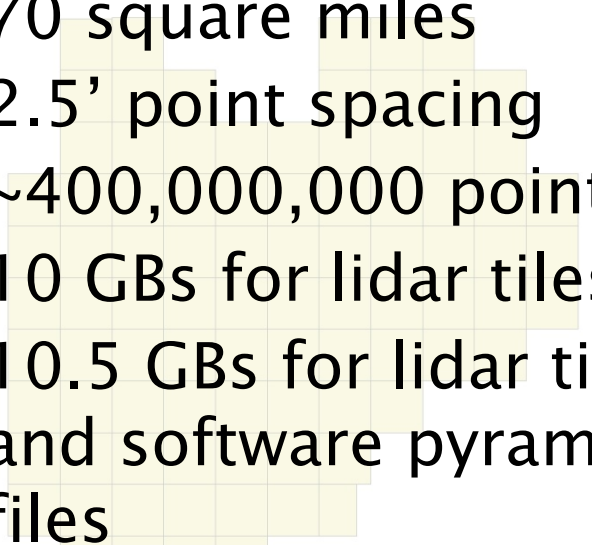
- ▶ What does Lidar data look like?
- ▶ Errors in the Lidar data
- ▶ Integrating other datasets with Lidar
- ▶ Extracting Information from Lidar



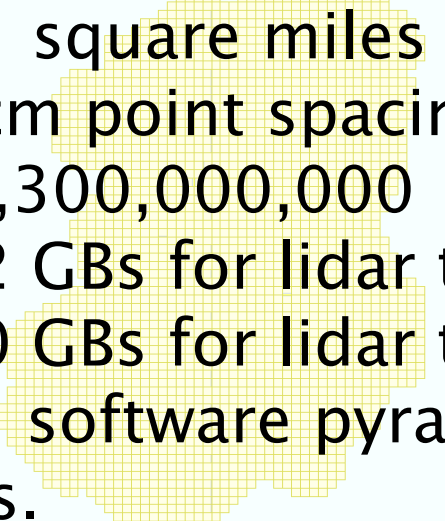
GROUNDPOINT
TECHNOLOGIES, LLC

What Does Lidar Data Look Like?

Some Project Specs

- 
- ▶ 70 square miles
 - ▶ 2.5' point spacing
 - ▶ ~400,000,000 points
 - ▶ 10 GBs for lidar tiles
 - ▶ 10.5 GBs for lidar tiles and software pyramid files

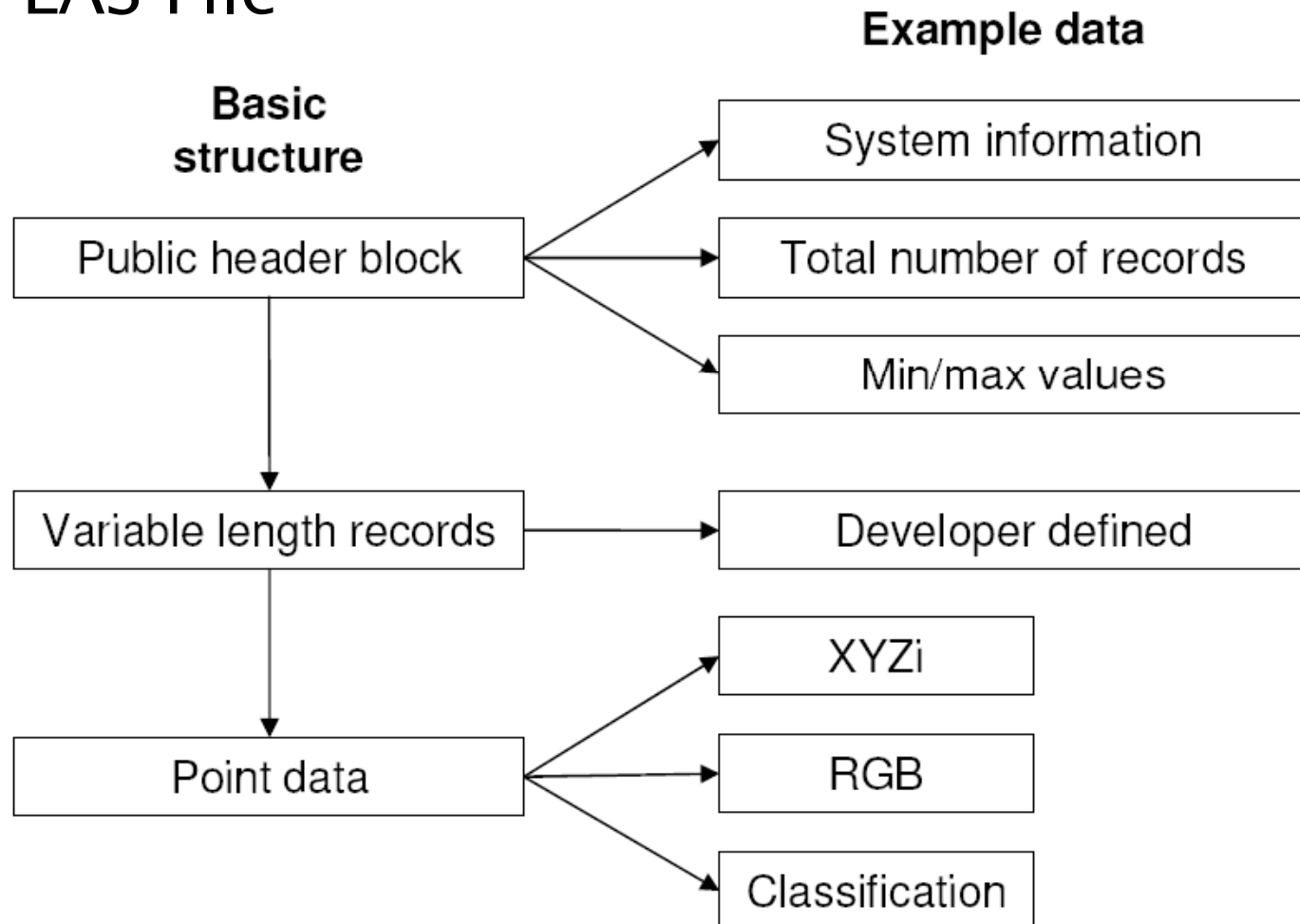
Odessa, TX

- 
- ▶ 551 square miles
 - ▶ 70cm point spacing
 - ▶ ~ 4,300,000,000
 - ▶ 112 GBs for lidar tiles
 - ▶ 120 GBs for lidar tiles and software pyramid files.

NYC Watershed – EOH

What Does Lidar Data Look Like?

► The LAS File



What Does Lidar Data Look Like?

► The LAS File

X	Y	Z	I
1462196.26	1121965.90	564.20	0.5
1462207.80	1121958.78	564.01	1.4
1462207.77	1121956.29	563.94	0.8
1462207.74	1121948.67	564.11	0.1
1462207.97	1121947.76	564.14	2.0
1462208.00	1121954.91	564.01	0.5
1462208.03	1121957.34	563.94	1.7
1462208.07	1121959.93	564.07	0.4
1462213.94	1121946.28	563.52	0.8
1462213.94	1121943.82	563.65	2.5
1462213.91	1121941.29	563.65	3.7
1462213.84	1121934.30	563.61	2.9
1462213.84	1121931.98	563.52	3.4
1462213.84	1121929.88	563.55	2.3
1462213.81	1121927.71	563.55	2.9
1462213.91	1121921.38	563.29	2.1
1462213.94	1121925.15	563.25	3.1
1462214.00	1121929.22	563.45	2.4
1462214.00	1121931.25	563.55	2.6
1462214.00	1121933.35	563.38	2.9
1462214.07	1121935.58	563.61	3.7
1462214.10	1121940.14	563.58	4.5
1462214.14	1121942.44	563.71	3.1

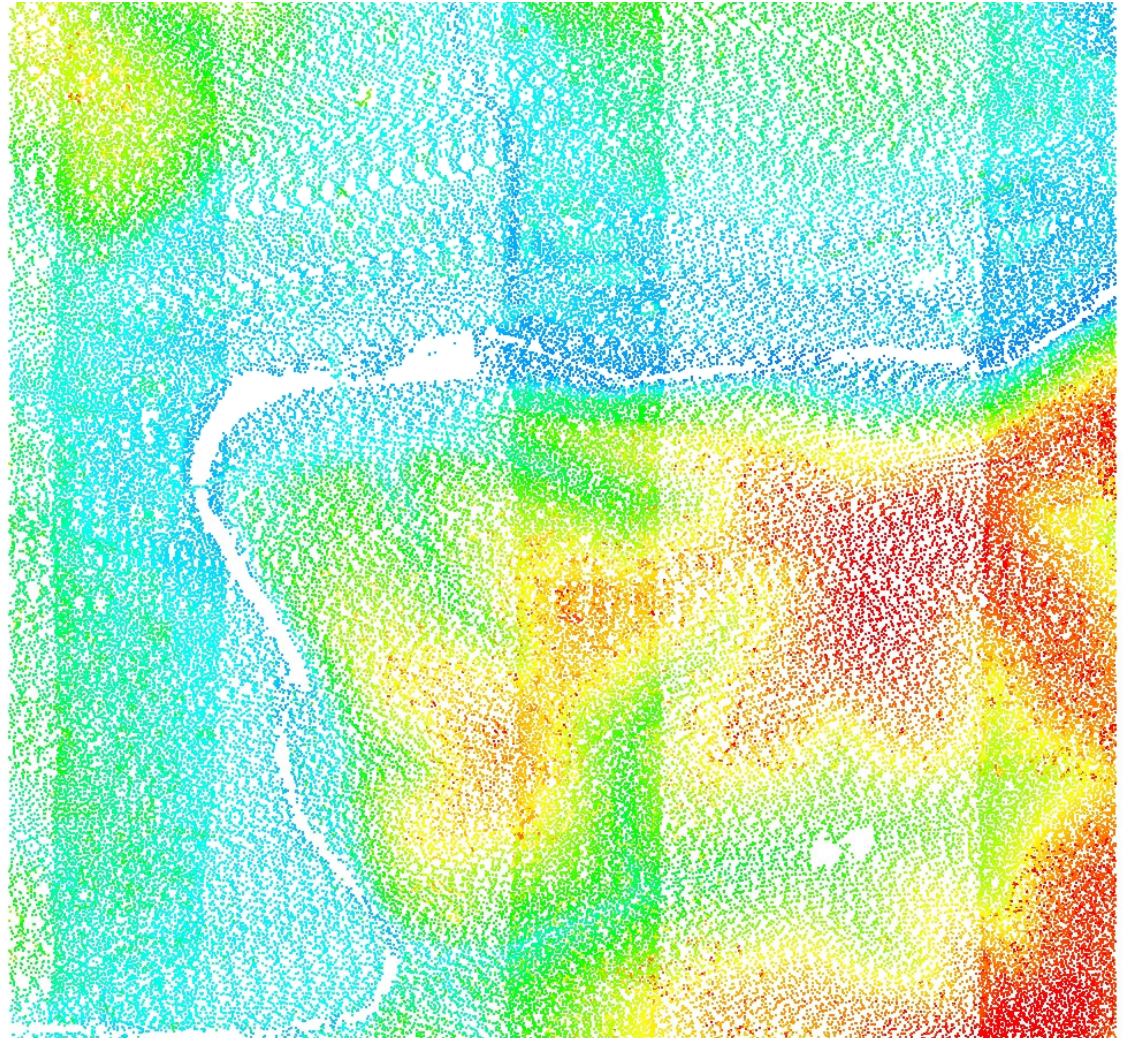
What Does Lidar Data Look Like?

- ▶ Image of Area



What Does Lidar Data Look Like?

- ▶ Full Point Cloud
- ▶ Symbolized by Elevation



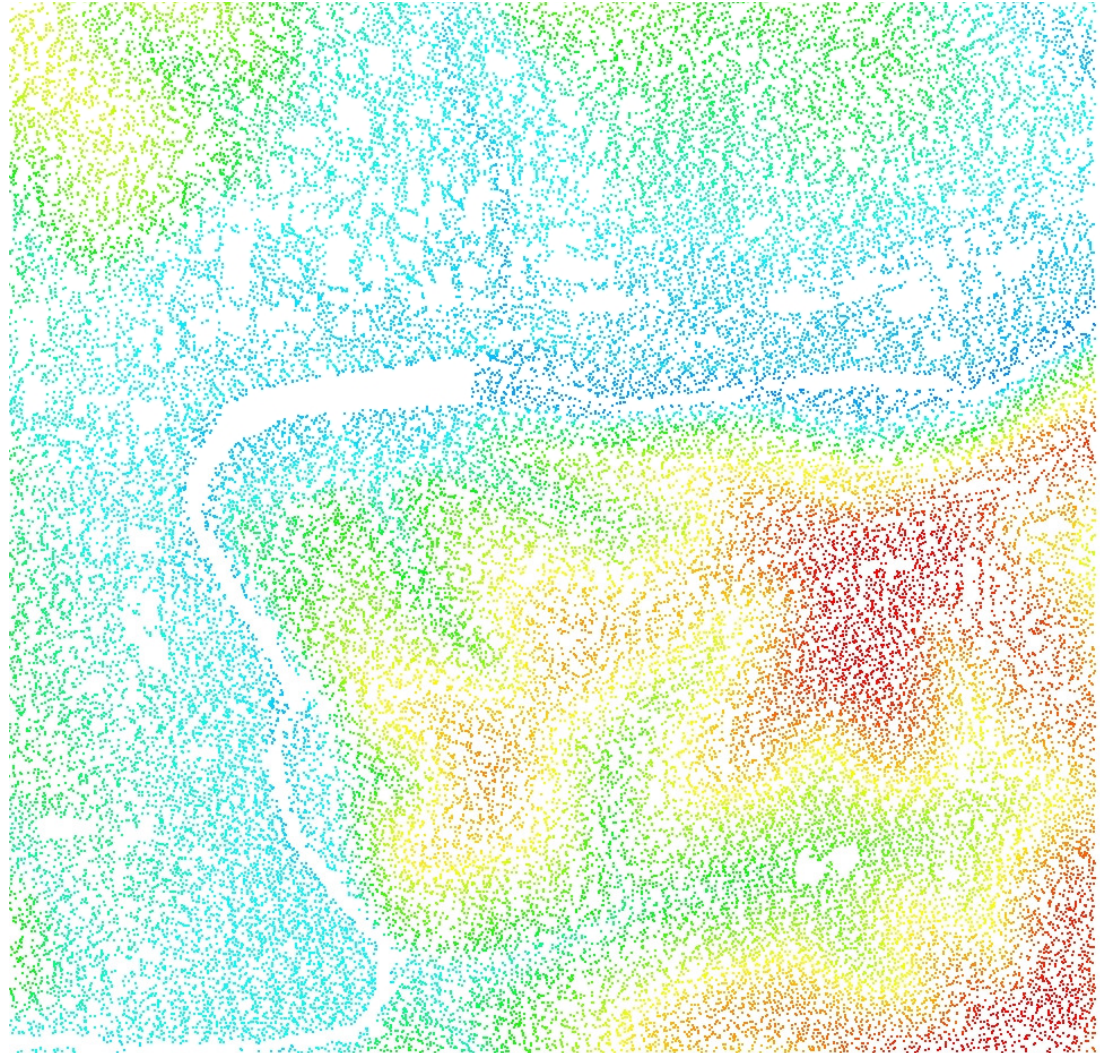
What Does Lidar Data Look Like?

- ▶ Full Point Cloud
- ▶ Symbolized by Classification
- ▶ Overlapping Flight Lines



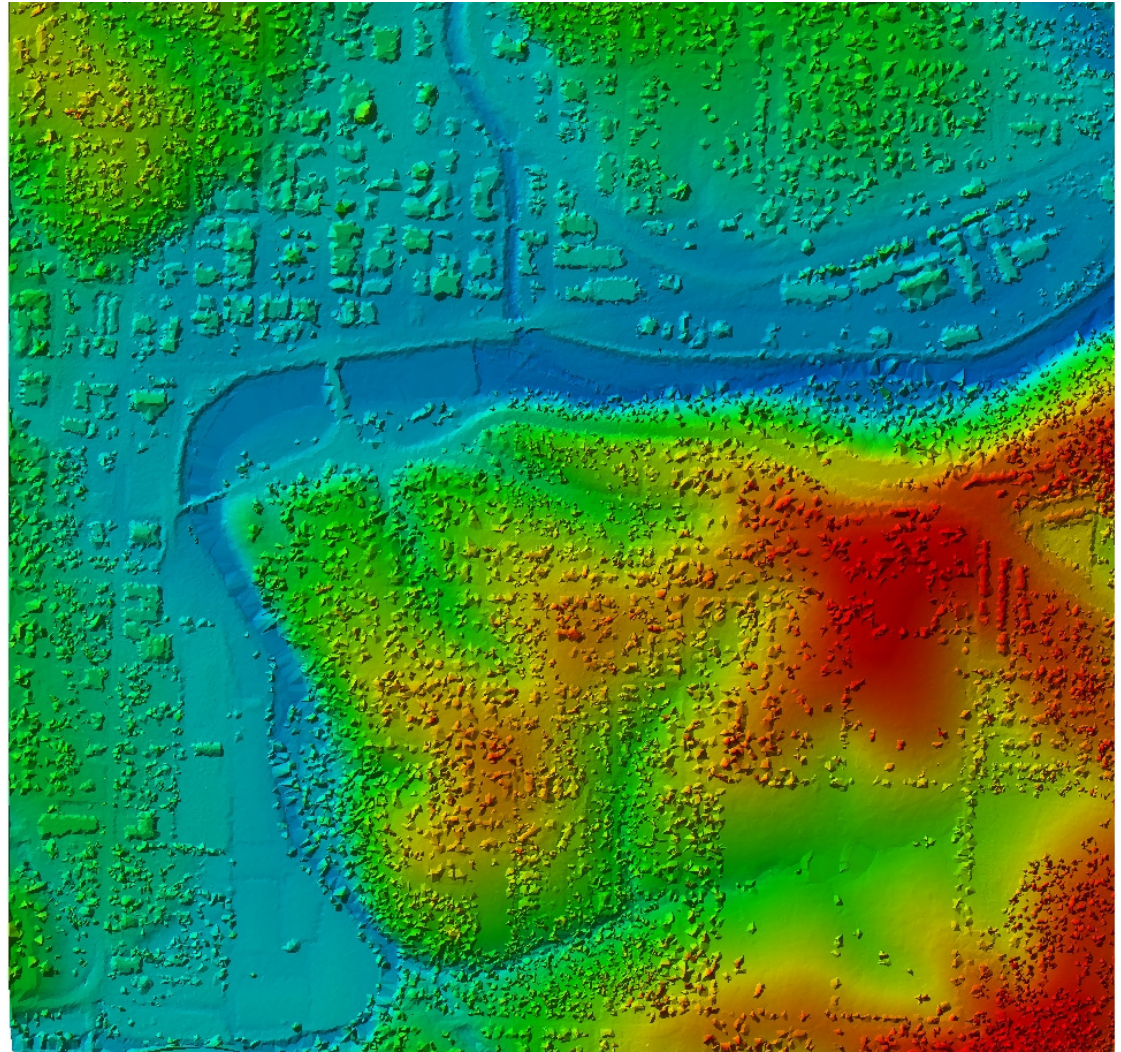
What Does Lidar Data Look Like?

- ▶ Ground Point Cloud



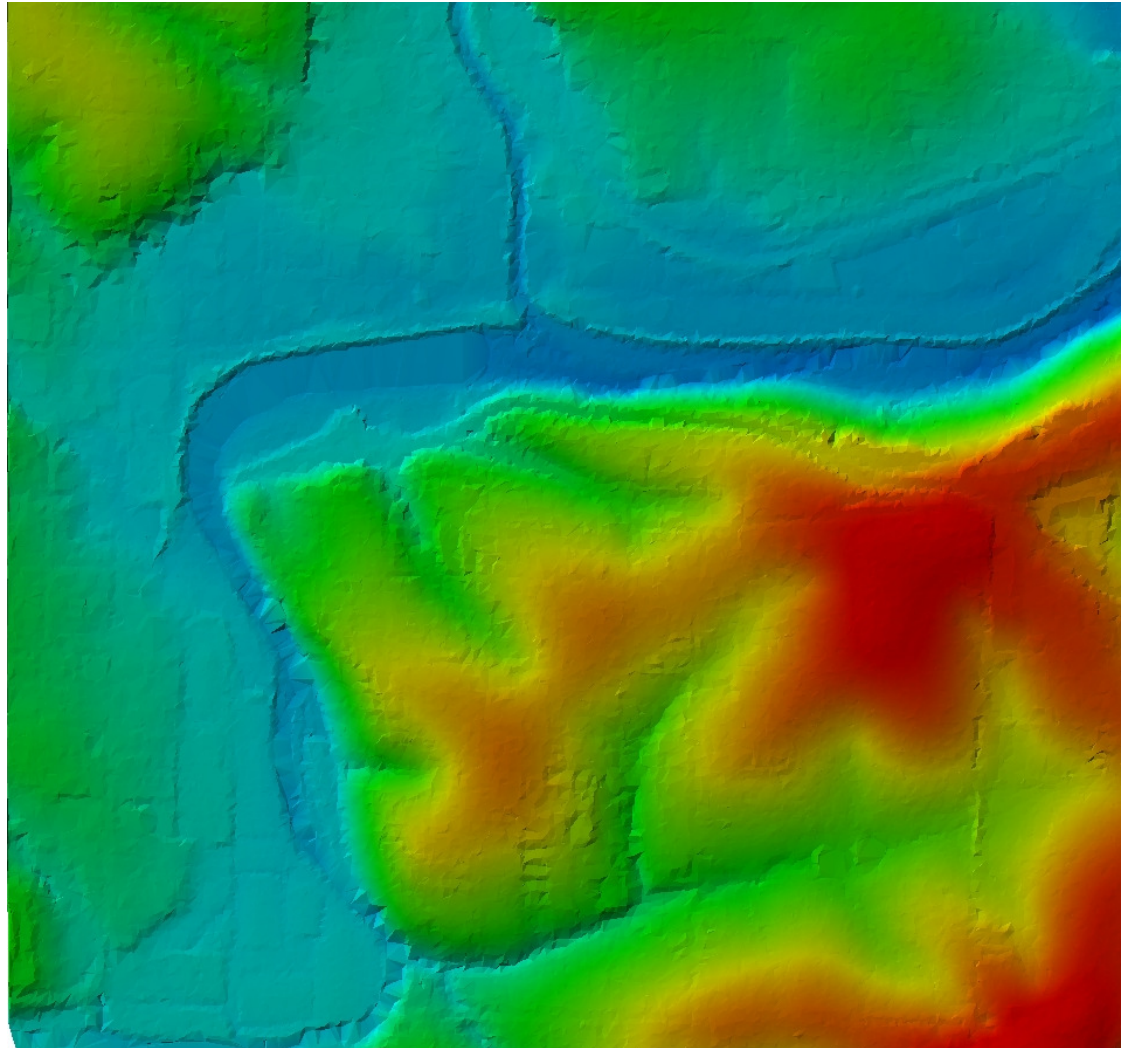
What Does Lidar Data Look Like?

- ▶ Full Point Cloud
- ▶ TIN rendering of Elevation

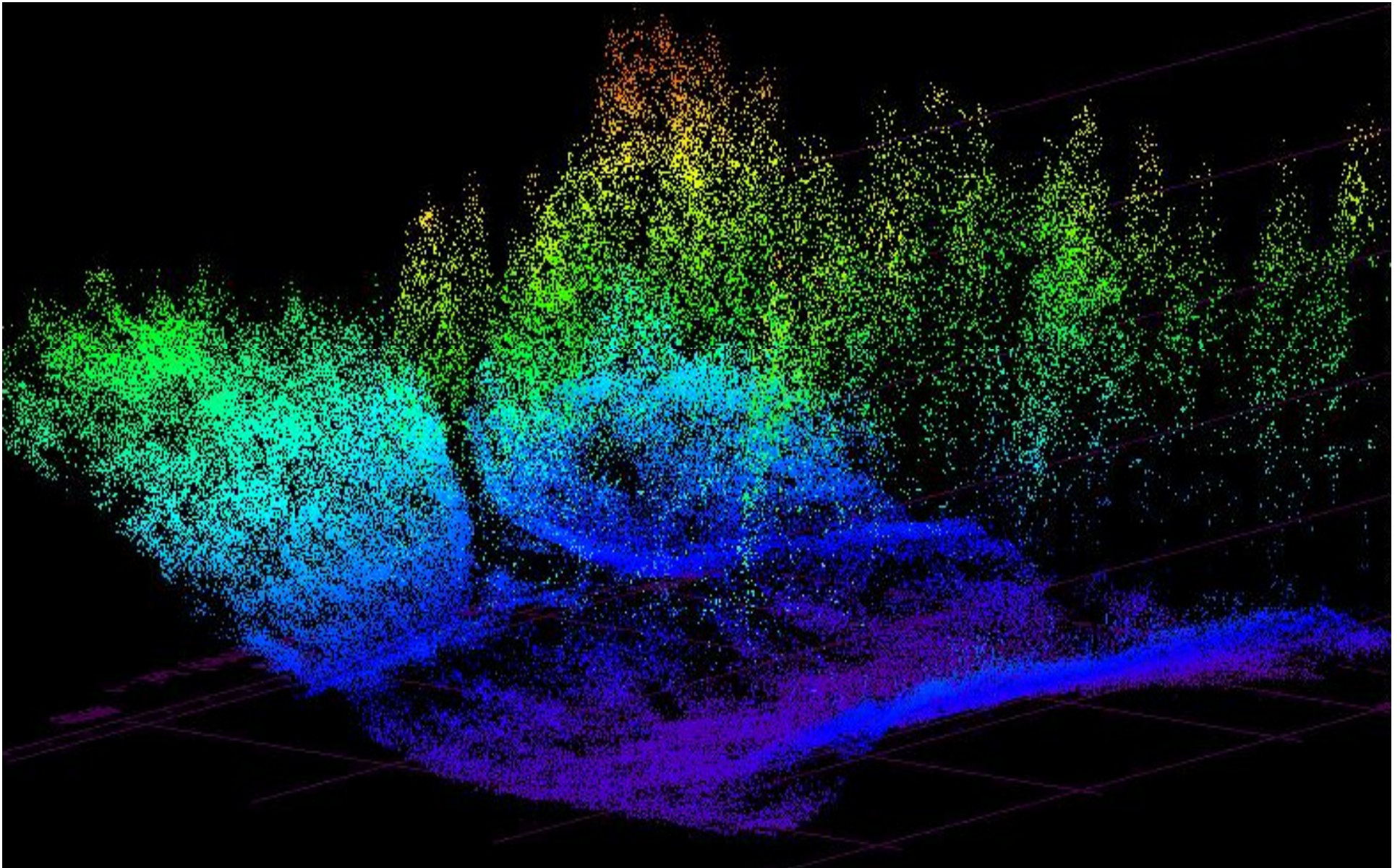


What Does Lidar Data Look Like?

- ▶ Ground Points
- ▶ TIN rendering of Elevation

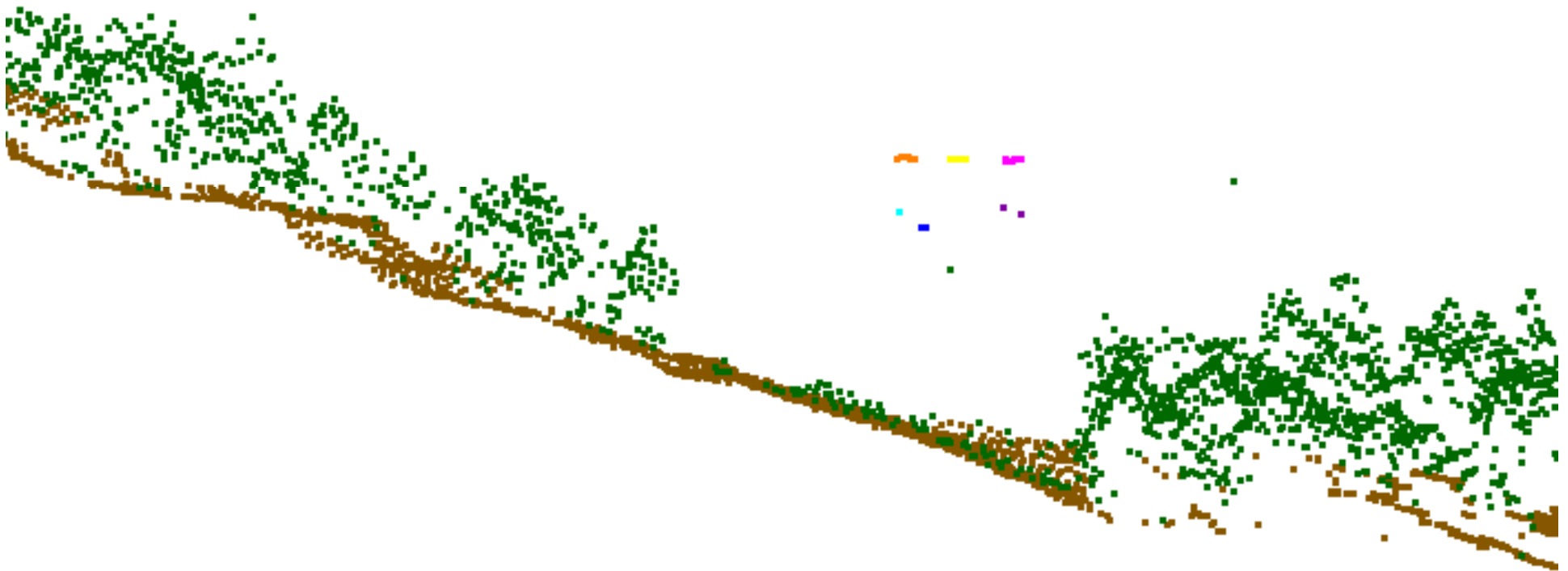


What Does Lidar Data Look Like?



What Does Lidar Data Look Like?

- ▶ Lidar Cross Section



What Does Lidar Data Look Like?

► Lidar Cross Sections

